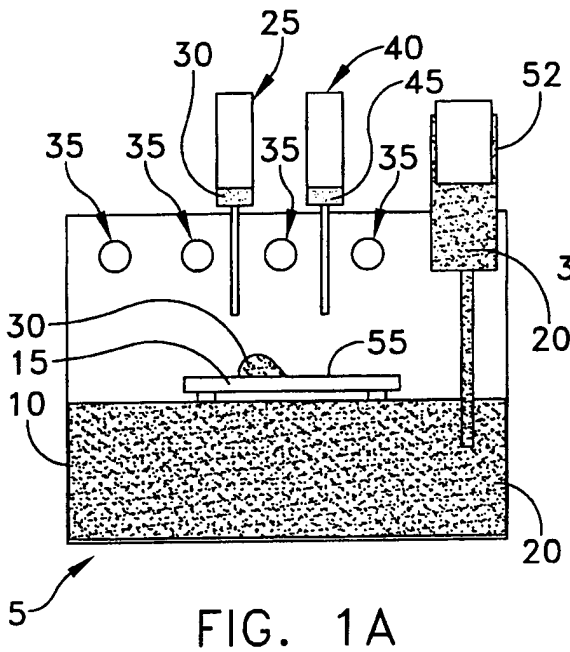


FIG. 1A

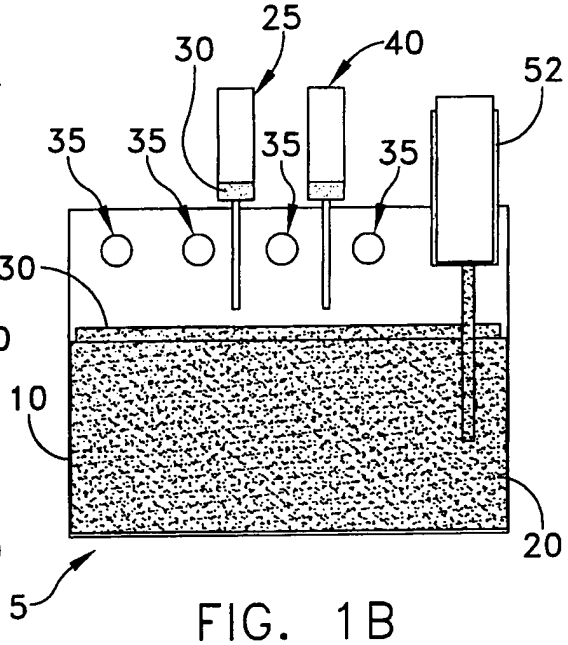


FIG. 1B

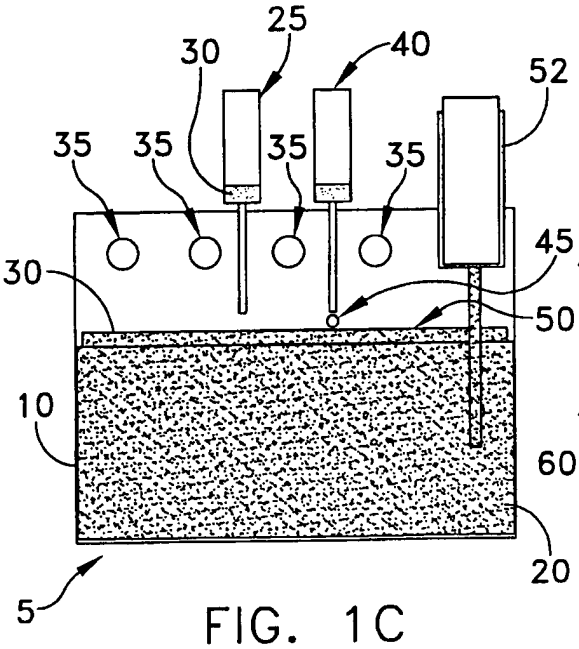


FIG. 1C

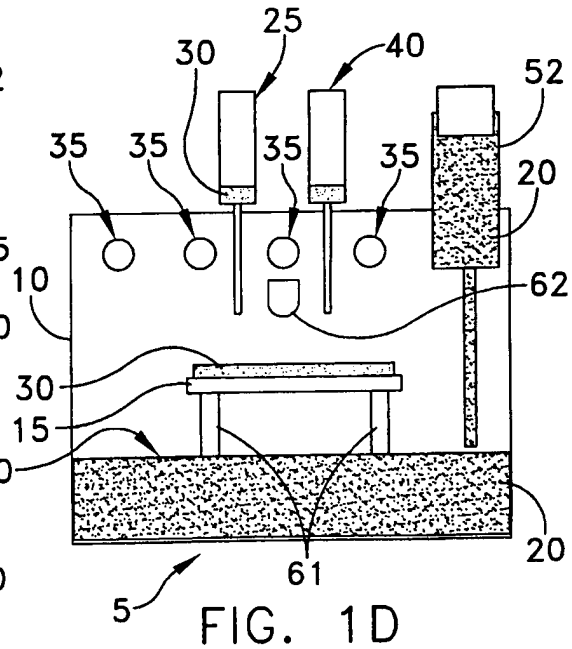
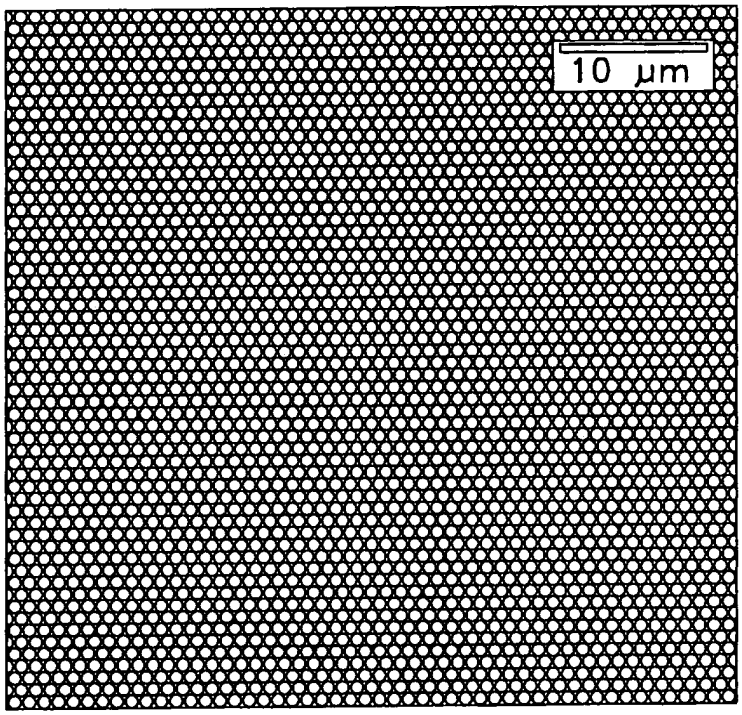
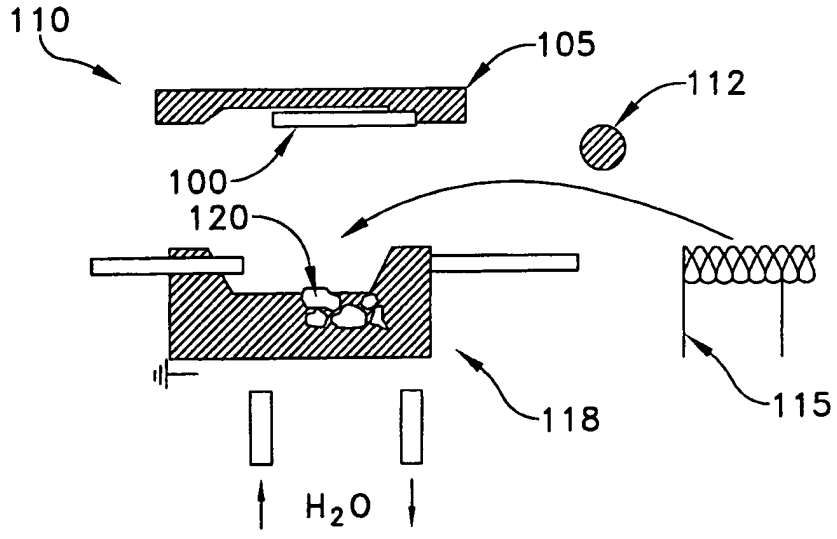


FIG. 1D



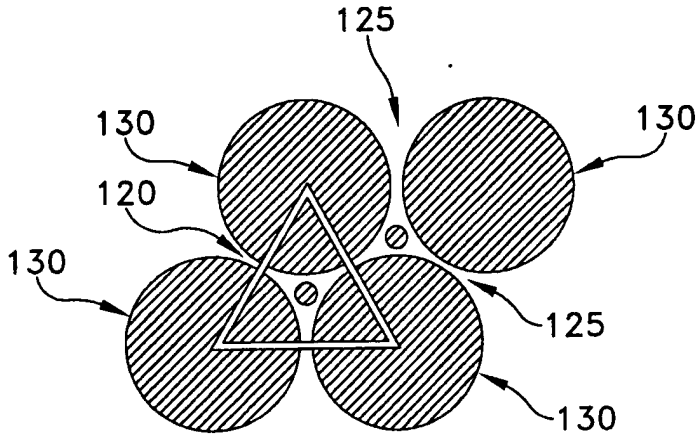
Spheres are arranged in nearly perfect crystal order.

FIG. 2



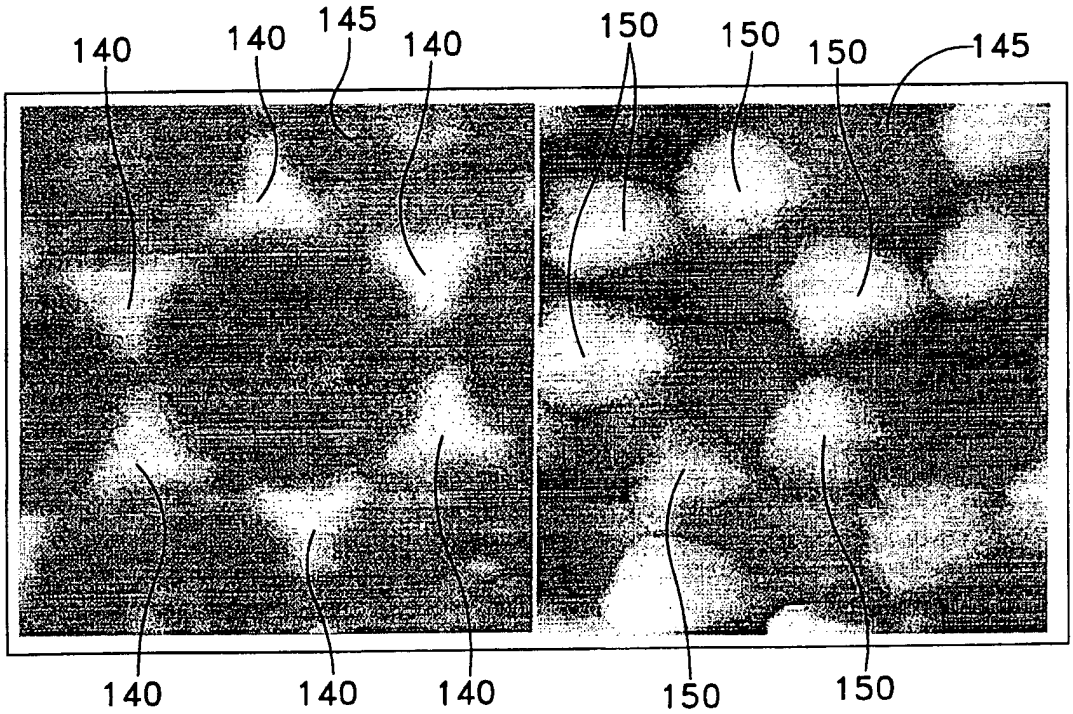
Electron beam evaporation of nickel onto the prepared substrate

FIG. 3



Deposition through the interstitial spaces results in triangular shaped deposits on the surface

FIG. 4

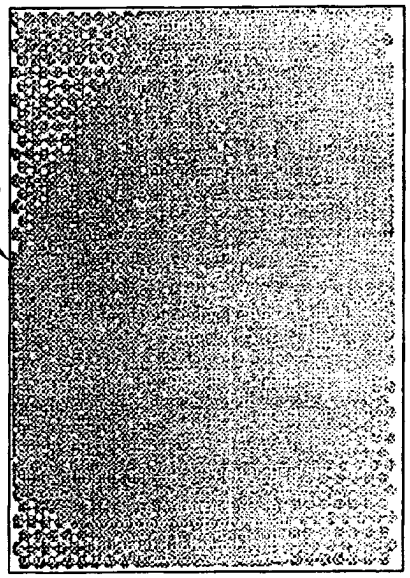


After coating and removal of the sphere mask, an array of deposited triangles is exposed.

FIG. 5A

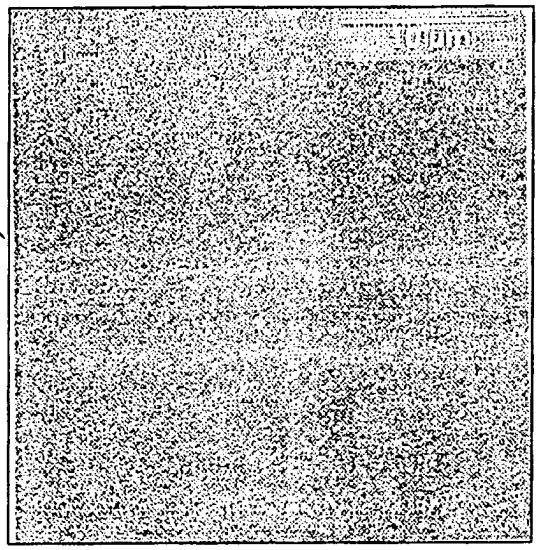
After a thermal anneal at 800C, the particles become more spherical.

FIG. 5B



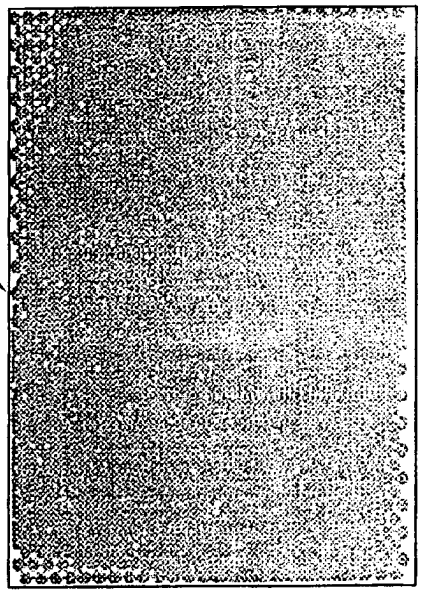
Schematically represents the pattern generated by two monolayers offset by 30 degrees.

FIG. 6A



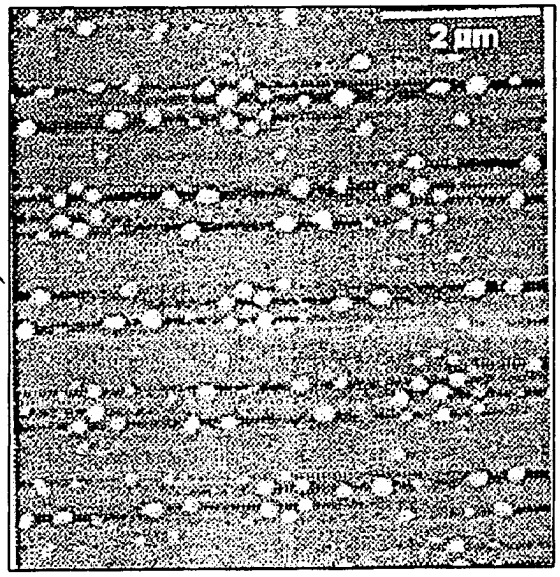
A Microscopy image of such an array fabricated with the disclosed method.

FIG. 6B



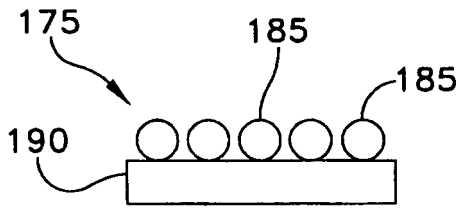
Schematically represents the pattern generated by two monolayers offset by 10 degrees.

FIG. 7A



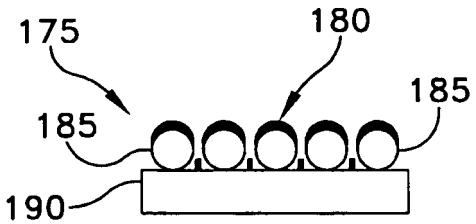
A Microscopy image of such an array fabricated with the disclosed method.

FIG. 7B



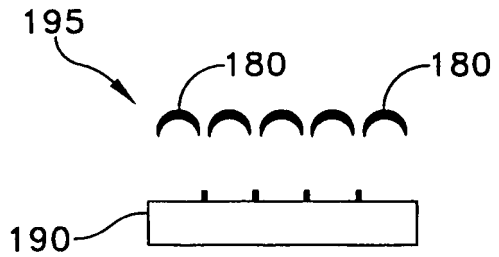
A schematic representation of an array of spheres on a surface.

FIG. 8A



Represents a coating atop the spheres, which leaves deposits in the interstices between spheres.

FIG. 8B



Shows the effect of dissolution of the spheres, and the resulting freestanding mask with holes plus the substrate with its corresponding deposits.

FIG. 8C